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# Worldwide Report

TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

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20 August 1984

WORLDWIDE REPORT  
TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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## CABLE &amp; WIRELESS PLANS FOR EXPANSION IN ASIA REPORTED

Hong Kong SOUTH CHINA MORNING POST in English 16 Jun 84 Business News p 1

[Text]

The Cable and Wireless group is seeking new business around Asia, but still expects strong growth from its operations in Hongkong. Mr Brian Pemberton, director Far East of Cable and Wireless PLC said.

Mr Pemberton, who is also a director of Cable and Wireless (Hongkong) Ltd, said that C and W has not raised its stake of nearly 80 per cent in Hongkong Telephone Co Ltd since March, when it acquired its majority stake through a general offer.

He said there are no plans to increase the holding, or to sell any shares.

The chief asset Hongkong Telephone has brought to C and W is staff skills, which are now being used in China, Mr Pemberton said.

C and W has a 49 per cent stake in Shenda Telephone Co Ltd, which is to install a telephone system able to meet the forecast demands of the Shumchun special economic zone for the next 20 years.

The company plans to spend about US\$180 million on this project, a spokeswoman said.

It holds 49 per cent of Huaying Nanhai Oil Telecommunications Services Co Ltd, and will spend US\$2-3 million a year during the pre-production phase of Chinese offshore oil field development, she added.

Mr Pemberton said most opportunities in Asia will be in providing a basic telephone service, rather than the advanced communications and data processing facilities demanded in North America and Europe.

In Macau, C and W has a

plan to spend \$1 billion in the 10 years which began in 1981, he said. He did not specify how much has been spent so far.

He said Macau has about 21,000 telephones, 10,000 more are being added each year, and there will eventually be about 100,000 in service in Macau.

Malaysia's intention to privatise its telephone service may provide opportunities for C and W, Mr Pemberton said.

There is also the possibility of new business in Japan, which intends to allow foreign competition in its telephone services system by next year, he added.

In Thailand, Hongkong Telephone has provided computer software to track customer orders and billings, he said.

A subsidiary of C and W, Cable and Wireless Systems Ltd is the equipment trading arm for the group's Asian business. Mr Chris Cox, the unit's general manager, said its turnover in the year to March 31 was US\$145 million.

Mr Pemberton said despite the problem of blocked funds in the Philippines, there is no intention of withdrawing.

The group holds 40 per cent of Eastern Telephone Communications Inc, which provides telex, telegram and data services, he said.

Hongkong already has 1.5 million telephone subscribers, or about 38 per 100 people, but is still adding 80,000 to 100,000 telephones a year, and shows no signs of peaking out, he added.

# LOCAL FIRM PRODUCING NEW TYPE OF MODEM IN AUSTRALIA

Hong Kong HONGKONG STANDARD in English 5 Jul 84 Business Standard p 3

[Text]

DATA-CRAFT HK, the leading datacommunications specialist, has introduced a new modem, manufactured in the company's Australian factory which has been described as a breakthrough product in specifications and price.

The Datacraft 5096 is a Universal Data Modem supporting communications at 9600, 4800 or 2400 bits per second but is priced lower than the current generation of low-priced 4800 bps-only modems.

The new Universal Data Modem, which was developed solely by Datacraft's own engineers, is the only high speed data modem supplied by the Australian Telecommunication authority. The product has now gained type-approval from Hong-kong Telephone Company.

Datacraft's Melbourne factory is currently producing the 5096 UDM at a rate of 1200 units per month, most of which are going to Australian Telecoms. However plans are ready for increasing the rate of production to meet the expected demand from the S.E. Asian region.

The Datacraft 5096 can operate in point-to-point or multipoint fast-poll modes

using the standard CCITT protocols for the corresponding communications rates:

9600bps — CCITT V.29  
4800bps — CCITT V.27  
2400bps — CCITT V.22

"We call this a breakthrough product because no one before has been able to offer the kind of performance given by this modem at such a low price," explained Mr Kevin Slattery, Managing Director, Datacraft HK.

Mr Slattery added that the 5096 UDM has already generated considerably interest among those datacoms users who were shown it in pre-release form, but that serious marketing of the new product has been awaiting HK Telephone approval, which was just recently granted.

"Because of the interest in this product already shown in the marketplace, we are considering appointed OEM's to help market the new product," said Mr Slattery.

Datacraft HK is a leading supplier of datacommunications equipment and also offers a design and consultancy service for the installation and maintenance of more complex datacom networks.

CSO: 5540/011

POSTAL, TELECOMMUNICATIONS SYSTEM UPDATED

OW010641 Beijing XINHUA Domestic Service in Chinese 0056 GMT 29 Jul 84

[By reporter Wu Jincai]

[Excerpts] Beijing, 29 Jul (XINHUA)--Writing letters, reading newspapers, making telephone calls, and mailing packages have long been an indispensable part of people's lives. In modern economic construction and international contacts, whether a message is quickly transmitted often determines the success or failure of an undertaking. It is for the purpose of serving the people and meeting the needs of national construction that new China's postal and telecommunications service has developed.

Nearly 900,000 personnel are now undertaking this arduous and important task. Traveling day and night, they transport and deliver mail by train, motor vehicle, aircraft, and steamship along postal routes totaling 4.7 million kilometers; in their operations rooms, they lose no time in transmitting messages through the telecommunications lines, consisting of microwave, cable, open wire, and shortwave telecommunications, or even through satellites.

According to calculations, the postal and telecommunications departments receive and deliver tens of millions of letters and packages, hundreds of millions of newspapers and periodicals and 470,000 telegrams, and make 830,000 long distance telephone calls a day.

A radical change took place in our country's postal and telecommunications service after the 1970's. In the past decade, our country has designed, and produced, a number of sets of advanced telecommunications equipment, and has put microwave, cable, satellite, and other advanced telecommunications means into common use. The world's most advanced optical fiber telecommunications technology and program-controlled exchange equipment has been used for the first time in the telephone system in cities.

The postal and telecommunications network, with the capital of Beijing as its center, has linked the country's cities and rural areas. It is the most important nerve network in the country.



This telecommunications network is also connected with the world, so that the distance between our country and other countries has been gradually reduced. Our country has established direct postal relations with 111 countries, and more than 1,000 through telephone routes with 45 countries and regions.

The scale of capital construction by postal and telecommunications departments is extending with each passing day. Since the Beijing telegraph building, the Beijing long-distance exchange building, and 35 key comprehensive post and telecommunications buildings in Shijiazhuang, Guangzhou, Tianjin, Hangzhou, and other cities were completed and put into operation, vigorous efforts have been made to build 14 new projects. A new underground cable artery is extending from Beijing to Guangzhou at the speed of scores of kilometers a day, and the capability of three communications satellite ground stations is also increasing.

CSO: 5500/4140

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

SWEDISH COOPERATION ON TELEPRINTER PRODUCTION--Shanghai, 28 Jul (XINHUA)--A contract for cooperative manufacture of microcomputer-controlled teleprinters was signed here today between a Chinese plant and Philips (Sweden). Under the contract, the Shanghai communications equipment plant under the Chinese Ministry of Posts and Telecommunications will import Philips' technology and equipment capable of producing 5,000 model pact 220 electronic teleprinters a year in the three years following the signing of the contract through compensation trade. After three years, the Chinese plant will be able to produce 3,000 such machines up to Philips' standards. By that time, most parts will be made in China apart from few key electronic components. Philips will give technical assistance and train Chinese workers, the contract says. The Swedish Government has granted preferential loans to the project. [Text] [OW281354 Beijing XINHUA in English 1304 GMT 28 Jul 84]

CSO: 5500/4142

## BRIEFS

DISTRICT-LEVEL MICROWAVE STATION--After 3 months of equipment installation, Nam Thanh District, Hai Hung Province, recently placed a microwave transmission station into operation to serve the district's broadcasting and wired radio system. This is the first district level microwave broadcasting station in Hai Hung Province. Applying the slogan "the state and the people work together," Nam Thanh District contributed more than 200,000 dong to purchase a wave generator, an amplifier and short wave receivers for installation at the villages. The Hai Hung Broadcasting Station appointed cadres and technicians and contributed hundreds of work days to move, install and tune the equipment at the broadcasting station and the receiving stations of the 5 villages in the district and they repaired and provided maintenance for the entire system of nearly 20 wired radio stations in the cooperatives to insure that they could receive and retransmit programs received from the district station's microwave transmission. By placing the microwave station into operation Nam Thanh District saved hundreds of kilometers of transmission line and insured that programming would be transmitted under all conditions. From the experience gained in the construction of the Nam Thanh District microwave station, Hai Hung Province is expanding the construction of district level broadcasting stations and will attempt to have microwave broadcasting station in operation in all of its 10 districts by the end of 1984. [Text] [Hanoi QUAN DOI NHAN DAN in Vietnamese 18 Jun 84 p 1]

CSO: 5500/4399

## AUTOMATION, EXPANSION OF TELEPHONE SERVICE DISCUSSED

Budapest FIGYELO in Hungarian No 28, 12 Jul 84 p 4

[Article by K.B.: "Telemath"]

[Text] In regard to development of the telephone service two fundamental goals figure in the long-range plan of the Hungarian Post Office extending to the turn of the century. The first, which is a condition for the second, is automation of the national network. The second, according to version I of the plan, is to achieve a telephone density of 30.7 phones per 100 inhabitants with a regional distribution in harmony with the requirements. The plan also have versions II and III calling for a density of 24.6 and 22.4 phones per 100 inhabitants. Even with an economic growth of 2 percent per year in the 20 years between 1980 and 2000 we will achieve a production level which could handle a telephone density value of 35.7 per 100, but achieving this could be prescribed only with a full concentration of forces. According to the studies pertaining to the target density, the prescribed density of 30.7 per 100 is one in which achieving the density of 15 per 100 necessary in production and administration will reduce the economic loss to the minimum. In this case the populace will still lack 535,000 residential phones but with a further development of 5 percent per year this shortage could be wiped out in 3 years. But if we fall short of a density of 30.7 per 100 then the postal, economic and social losses will become permanent, or will increase in proportion to the degree of the shortfall, as discussed below.

The Favorable Case: 50 Billion

The revenue deficit arising at the Post Office is 3.5 billion forints per year, if the gross annual revenue per phone is 5,185 forints. In the case of the 535,000 residential phones missing between a density of 35.7 and 30.7 we can calculate with a revenue shortfall of only about 2,600 forints, proportional to their traffic, which means 1.4 billion forints for the 535,000 phones. On this basis, the losses piling up in 20 years will be 49 billion, with realization of version I of the plan. If we could achieve a density of 35.7 per 100 then the accumulated losses would be reduced to 35 billion.

Each shortfall of 1.0 per 100 from the 30.7 per 100 density means a shortfall of 107,000 phones and 555 million forints in revenue. In version II, prescribing a density of 24.6 per 100, the losses piling up in 20 years would be roughly 93 billion forints. In the case of version III, giving a density of 22.4 per 100, the accumulated losses would increase to 106 billion forints.

In the case of version I the ratio of institutional to residential phones will be 49:51 and the desired density of 15 per 100 institutional phones will be achieved. Thus, even in this favorable situation the accumulated losses up to the year 2000 will be 50 billion forints. If full automation also satisfies the public institutions, then the accumulated losses decrease to 37.5 billion. In version II the ratio of institutional to residential phones will be 55:45 and then the institutional density can reach a value of 13.5 per 100. The economic losses accumulating between 1981 and 2000 would be 86.9 billion forints. In the case of version III the situation is even less favorable; the institutional density will fall below what is required by a value of 2.0 per 100 and the accumulated losses will be 99.2 billion. The missing revenue for the Post Office will be this amount also.

#### Losses Which Can Be Avoided

In regard to evaluating the development of service to the populace there is no accepted calculation method to establish the total social losses deriving from deficiencies in service. This would require a basic study. The calculation method outlined below, which appears acceptable after a number of test calculations, can be regarded only as an experiment.

It can be presumed that every household has a need to communicate information; if this is not met it causes not only inconvenience but also superfluous travel, loss of time and effective damage. This need develops differently for households as a function of life style, work relationship and cultural level. In the following I made use of the moderate hypothesis that the households can be divided into thirds for which the information need necessarily to be transmitted and expressed in impulses is 160, 80 and 40 impulses per year and that the value of each such impulse is 10 forints. It seems probable that by and large the connecting of phones will follow the order of demand. Naturally, certain losses arise even for those supplied with phones if they want to contact a household or institution which does not have a phone. I took the reduction in need to be proportional with the growth in supply, although the actual situation is less favorable than this.

The accumulated social losses between 1980 and the year 2000 are high enough for every version of the plan, because they are at present and they will not disappear even at a density of 35.7 per 100 in harmony with the economic level to be achieved. In the case of plan I the accumulated losses are 43 billion forints, 50.3 billion for plan II and 52.3 billion forints for plan III. At a density of 24.6 per 100 the total losses come to three times the investment; at a density of 22.4 per 100 they approach four times the total investment. In judging the utility of the telephone service, on the basis of the foregoing, we will discuss only plan I.

If we take the gross revenue per phone as 5,185 forints when calculating the results which can be measured directly at the Post Office, then the revenue in 1980 for 1,261,000 phones was 6.53 billion forints. In the year 2000 the gross revenue for 3,284,000 phones will be 17.03 billion forints--calculating with unchanged fees. In the 16 years before us the accumulated gross revenue of the telephone service can be put at 235.6 billion forints in the event of a linear development.

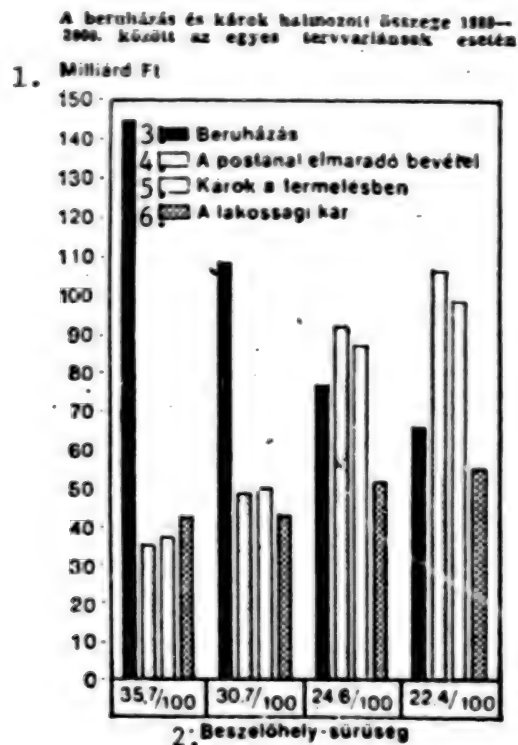
In the economy an institutional density of 1.0 per 100 in 1980 meant a yield of 1.64 billion forints. This will be 2.46 billion in the year 2000. In 1980 the density of 8.15 per 100 yielded 13.36 billion forints. In the year 2000 a density of 15 per 100 will yield 36.90 billion. The accumulated "profit" is 502.6 billion forints.

At the social level also a result can be calculated as losses avoided. In 1980 this result for the 404,000 residential phones was 640 million forints. In the year 2000, calculating with 160 impulses for 1,470,000 phones and 80 impulses for 415,000 phones the result is 2.68 billion forints. The accumulated value of the losses avoided would be 33.2 billion forints. Naturally, in the case of residential telephones the utility does not manifest itself, or does not manifest itself only in the losses avoided but rather in improving social morale, in the development of human contacts and in greater security for life and property. On the basis of this it can be hypothesized that the result of every residential phone at least corresponds to the expenditure of the household itself. On this basis the social profit of the 404,000 phones in 1980 was 800 million forints and will be 3.77 billion in the year 2000. The accumulated yield over 20 years would be 45.7 billion.

#### It Pays Off Every Three Years

The yield which can be calculated from the preceding three items is 783.9 billion forints during 20 years as opposed to the entire investment total of 109 billion, which means that the facility repays its own value every 3 years, thus satisfying the basic requirement made of industrial installations, and generally not met by us. When comparing the several versions of the plan it is obvious that, if we compare investment costs and the potential losses, the optimum develops at a density value of 30.7 per 100. At this level the losses arising are only 142 billion forints as compared to a total investment of 109 billion forints while at a density of 22.4 per 100 the investment is 66 billion forints but the combined sum of the losses is 257.5 billion forints. If we consider that by the turn of the century we must use 66 billion forints in any case then in essence all we have to decide about is the difference between the two investment versions, thus 43 billion forints. The effectiveness of this extra expenditure is extraordinary. Not only does it make possible the elimination of 115.5 billion forints in accumulated losses, it also makes possible attaining the 784 billion forints in accumulated yield demonstrated above. In addition, the plan prescribing a telephone density of 30.7 per 100 makes possible the realization of a plan which can further developed economically, a plan which is suitable for satisfaction of all telecommunications requirements (telegraph, telex, data transmission, closed chain systems, etc.).

Figure: The Accumulated Sum of Investment and Losses Between 1980 and 2000 In The Event of the Several Plan Variants



- Key:
1. Billions of forints
  2. Telephone density
  3. Investment
  4. Revenue lost to Post Office
  5. Losses in production
  6. Losses to populace



The developmental pace resulting in a density of 22.4 per 100, a 3 percent per year pace which does not reach even half the world average, means either that we offer modern services to half the population of the country and the other half must catch up to the present level or it means that we will generalize and prolong for the entire area of the country a poverty level with unevenly distributed half-solutions which are difficult to develop further.

#### To Decide About 43 Billion

In itself the circumstance that every factory, institution and dwelling gets a telephone does not mean the creation of economic results. It is probable that the revenue results at the Post Office will develop as planned. But the behavioral style of users must change radically, primarily in the economy and in administration. Swift transmission can increase the value only of genuine information. We cannot expect results from the swifter transmission of the sort of information customary today, such as I do not know, Maybe, Please inquire later, I cannot give a time limit, We will talk about it, etc. The information transmitted by telephone must rise to the same rank as written information.

In regard to the Post Office it must be noted that a condition for the economical operation of the system, offering suitable profit, is that the value of the equipment at any time should not be greater than three times the revenue. If a density of 30.7 per 100 is reached then the value of the equipment in the year 2000 may be 75 billion forints, taking into consideration the figures for 1980. Achieving this is doubtful, partly because about 40 percent of the investment will be realized in the last plan period, thus the depreciation of these portions will hardly have appeared yet, and partly because our costs for installing a phone are very high by international standards. Within the 200 percent cost increase which has taken place since 1975 the cable prices have risen by only 10-40 percent and the switching technology prices have risen by 40-50 percent. so it can be hypothesized that with better utilization of the assets turned to investment we can decrease, or at least maintain at the same level, the specific costs of telephone investment.

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CSO: 5500/3021



# DEVELOPMENT OF SELECTIVE CALLING SYSTEM DESCRIBED

Budapest MAGYAR HIRLAP in Hungarian 19 Jul 84 p 8

[Article by Erika Zador: "Telephone Supplement--With Question Marks: Selective Personalized Calling System"]

[Text] Recently I went to the Postal Service's headquarters with agitated curiosity. This is because they were going to introduce the first units of a system to potential users, manufacturers and interested parties, which under normal circumstances is an auxiliary, convenience service of the telephone network, but in the domestic telephone situation, well known to be poor, it may also serve as some kind of a telephone supplement.

Visit Grandmother!

We are talking about the selective personalized calling system. One cannot make a telephone call with it, but its pagers are small enough to be carried in one's pocket and will indicate anywhere in the country that there is a call for its owner. And indeed it can even do more than similar pagers made abroad: it is capable of relaying brief messages. The Hungarian equipment has to be smarter because in this country calling up someone is not such an easy task. But the eight digits on the monitor can relay quite a few precoded messages. A simple example: a seven digit calling number (1 and the six digits in Budapest, the area code and the five digit number in the districts) plus one more number which indicates whether the called party should return the call immediately, an hour or a day later, in the morning or afternoon. But the code may also mean to go pick up the child, visit your grandmother, pick up your freight at such and such location, etc.

But need has also forced the Postal Service to make another rational improvement. Generally in other places the selective personal calling system has its own transmitter network, which transmits only these signals. In this country these signals are "fitted into" the UHF broadcasts of Radio Kossuth. But in order to transmit the signals, auxiliary equipment will have to be built for each of the presently nearly one dozen transmitter stations.

The system can be operated automatically from special pushbutton telephones which contain the circuits which relay the signals to the transmitter. It was either so manufactured originally or this feature was installed later. The caller dials the central then by pressing the button with the star

activating the special circuit. After this he "plays" the calling number of the "squawk box" being called, then the eight digit code, and finally by pressing the Maltese cross button he indicates the end of the transmission. These calls go directly to the transmitter. The broadcast signal activates the called and only the called equipment which begins to chirp and displays the message on its screen.

Calls can also be made from regular telephones but in this case the system operates in a "semiautomatic" mode. The caller dials the operator where the dispatcher picks up the telephone and relays the message to the transmitter.

There was an avalanche of questions after the introduction. Even though chief project manager Istvan Baka, who held the introductory session, emphasized many times that among the jobs of preparing this service they have dealt only with the technological questions, and that as of now there are no decisions by the Postal Service concerning prices, still this was what everybody was primarily interested in. Finally it came to light that in case of favorably long production runs the cost--not the price!--of the pocket pagers would not exceed 10,000 forints. On the contrary, as he explained, they were the ones who had set this upper limit because they know well that the interest of the manufacturer is to put as many services into the equipment as possible, and thus to be able to sell it for as much as possible. No decision has been made either about whether the Postal Service or retailers will sell the equipment to the future subscribers or loan it like the traditional dial telephones.

But the surprisingly many doctors present--just like the writer of these lines--found the 10,000 forint figure too high. Especially when they found out that one pushbutton telephone costs 3,000-4,000 forints. By the way, just as a note: the circuit to be built into the calling telephones for automatic operation is also expected to cost no less than 500-1,000 forints. By the way, the reason why so many doctors came is that for them--or more accurately for us, all of us!--this equipment is indispensable. A cardiologist commented, as did a professional who specializes in organ transplantation. Besides their shifts, at least 10 days a month they are on call. They have to be in places where they can be reached by telephone and called in immediately. Which in Hungary also means at the same time that they are practically prevented from leaving the area of their cities, they can not go to the theater, or take a walk, or visit their relatives or friends who have no telephone, and so on. But the health care agencies can not afford such expensive equipment. But the doctors agreed that the enterprises would unquestionably recover quickly the mentioned sum--for example, from eliminating empty runs by their trucks, but they suggested that if the system becomes reality--even if in an experimental form with a few thousand units--the Postal Service should make the service available at no charge to the health care profession. But to the Postal Service as an economic operating organ this is not a passable path because, as they have pointed out: the health care profession does not receive the drugs and the injection needles free of charge either.

## By Vibration

But implementation itself is far from being simple. If they select the manufacturer from among the firms also represented at the introduction, as the first task they together will have to work out the details of a small equipment type which is truly suitable for carrying in the pocket and which can be produced in long production runs. Which means not only the selection and assembly of the appropriate parts but also the design and building of the necessary circuits. By the way, the Microelectronics Enterprise is participating in this development.

The representative of one of the firms which manufactures telephones disagreed with using the 11th and 12th buttons on the pushbutton telephones--the star and the Maltese cross--for this purpose, saying that in their new telephones these buttons have other functions for which they will be used in the future. Many people were also asking questions about selectivity. This was because the pagers on the table sounded off by themselves with no reason. In connection with this the answer was satisfactory. Reliability will be increased: the pager called will activate under all circumstances, but the others will not give an indication. By the way, the sound can also be deactivated, at which time the pager will signal by vibration. This is very important, for example, when the called party is in a theater or is participating in an important conference: the call will not disturb the others.

## When?

The answer was also favorable to the question "When?" Within the area of the Budapest transmitter an experiment with a hundred units will begin within a few weeks. If the circuits will be built and negotiations for manufacture will be completed, the system may be operational as early as 1986--even with as many as a million participants. But the service may not just be limited to relaying personal messages, even though it was obvious from the questions that this very role as a "telephone supplement" was what interested most of those present. The system is also capable of transmitting announcements which would be displayed simultaneously on the receivers of every member of a group. Or it can transmit an electrical signal which could turn on or off appliances by remote control. It can work as a wake-up service which wakes people up accurately. Now, for example, the telephone operators can handle wake-up calls ordered for peak periods only within a certain time interval since it is impossible to call several hundred people at the same time, at--let's say--six in the morning. But the selective calling system can even make several calls per second.

The question was asked: if a million people will have equipment which indicates that at least he is being called, won't the extra telephone calls overload the network even more which even today can hardly handle the load? According to the experts the expectation is that it will not, on the contrary, in a certain sense it may even lessen the load. That is, if the called party can also be paged through the radio several attempts to make the call will not have to be made. And while a normal telephone conversation

requires a longer time, making the call and depressing the code takes only about a half a minute even on today's unfortunately very slow equipment.

The introduction proved that endeavor of the Postal Service's experts that they are trying to ease somewhat the practically shock-situation caused by the shortage of telephones, even though substitution of telephones was only one--though undoubtedly a significant--goal of this work. Technicians of the Technical University also participated in the work, and the OMFB [National Technical Development Committee] will also support the experiment. But that much is obvious that this service, the implementation of which is obviously less costly to the Postal Service than laying cables--and no decision has yet been made about the costs to be borne by the users--can in no way replace the unpostponable expansion of the telephone network. But until then every idea which eases the economic and pretty soon also social problems resulting from the lack of communication should be gladly welcomed.

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CSO: 5500/3022

## INTER-AMERICAN AFFAIRS

### BRIEFS

COSTA RICA: NOTIMEX OFFICE--San Jose, 24 Jul (NOTIMEX)--The only explanation for opening a NOTIMEX office here is Mexico's determination and great interest that Mexico and Costa Rica know each other better and become still closer, Manuel Alonso, director of social communication of the presidency of the Republic of Mexico, has stated. During the inauguration of the regional offices of the Mexican news agency NOTIMEX in this city, Alonso said this center will constitute one more link in the long chain of common elements between the two peoples. He expressed gratitude for the presence in the ceremony of Costa Rican President Luis Alberto Monge. NOTIMEX Director Hector Manuel Ezeta stressed that NOTIMEX regional offices were established in Costa Rica in recognition of the country, the gathering place of the isthmus where all ideologies and political and social preferences are discussed and examined in a climate of absolute freedom. [Excerpt] [FL252031 Mexico City NOTIMEX in Spanish 0210 GMT 25 Jul 84]

CSO: 5500/2061

MINISTER AUTHORIZES USE OF ANTENNAS FOR SATELLITE IMAGES

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 8 Jul 84 p 17

[Text] Campinas--The owners of TV sets who may want to modernize signal reception now have a legal alternative without piracy: the minister of communications issued a regulation authorizing the domestic use of parabolic antennas that receive directly from the satellites the transmission of programs from Brazilian, Latin American, U.S. and even Soviet television stations.

In Sao Paulo, the president of the Brazilian Association of Radio and Television Broadcast Stations (ABERT), Joaquim Mendonca, considered the regulation for the acquisition of those antennas an "excellent solution" because it insures the freedom of individuals to receive point-to-point signals inasmuch as the images received in that way are intended for personal use and cannot be commercialized "since Law No 4,117 prohibits their subleasing or sale". The president of ABERT pointed out that "with radio, it is normal for a listener to tune in a station from any part of the world."

Three companies--the [Amplimatic] of Sao Jose dos Campos, [Andrew] of Sorocaba and Harald of Curitiba--have already built the complete receiving system with an amplifier--to improve the quality of the signals, the satellite receiver to be coupled to the television set and the 3 to 6 meter diameter antenna. The combination permits access to TV signals carried by the satellite to which the antenna is pointed.

Before the regulation of the Ministry of Communications signed last week, only juridic entities were authorized to install antennas for satellite TV reception. That restricted the market to the companies with large project sites and to the city governments in the Amazon region, which is not reached by signals by conventional means, for retransmission to the communities.

However, that limitation did not prevent individuals also from taking advantage of that technology to intercept satellite TV signals, following the trend that began in the United States in 1975 and proliferated in the eighties. It is estimated that by the end of this decade, there will be 150,000 antennas installed in the United States with access to 200 channels.



According to the managers of the factories, the ineffective control by the National Communications Department (DENTEL) permitted many antennas to be bought by companies and installed in private homes. Now, however, home operation is legal.

The use of parabolic antennas may arouse much debate among television networks. One of the implications is the possibility of intercepting the point-to-point service used by the TV stations to transmit certain programs, especially news material, from an originating station to its headquarters. That material may be edited down or even cut off completely--such as the soccer games which are not transmitted to certain places because they are the site of the game--but can be received by whoever has a parabolic antenna.

The president of ABERT believes, however, that the reception of the signals--the video transmitted from the originating station to the headquarters of the channel--will not arouse much interest. According to Mendonca "since the code of ethics of Brazilian radiobroadcasting was established, and drawn up with the participation of ABERT, the professionals are aware of their responsibilities and know well what they can and cannot put on the air."

8711

CSO: 5500/2056

# MINISTER VIEWS FUNDING THROUGH 1987, SATELLITE LAUNCH

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 12 Jul 84 p 9

[Text] Brasilia--Communications Minister Haroldo Correa de Mattos announced yesterday in a lecture to students of the War College (ESG) in Rio that investments in the telecommunications sector for the 4-year period 1984-1987--excluding the postal service and radiotelephone--will be on the order of 5.6 trillion cruzeiros, making it possible to increase the number of telephone terminals in the country from the present 10,130,000 to 11,930,000.

The minister revealed that last year investments amounted to a little more than 503 billion cruzeiros at current prices which permitted contracting for only 288,000 telephone terminals, the lowest figure since 1978. However, this year that figure will be increased to 370,000 with investments of 1.2 trillion cruzeiros. Haroldo Mattos justified that reduction of investments last year on the basis of the crisis existing in the country.

He supported the state monopoly in the sector, declaring that that has made it possible to reconcile frequently divergent needs. He declared that, within the objective of establishing telecommunication services that will favor a homogeneous development of the whole society, measures were adopted such as the reduction of the number of telephone companies (from 969 in 1973 to 159 in 1983). In that 10-year period, the number of telephones installed increased from 2,410,000 to 10,135,000, which increased the number of telephones from 2.4 to 7.9 per 100 inhabitants.

In supporting the Brazilian domestic satellite (Brasilsat) to be launched next March, Haroldo de Mattos said that paradoxical as it may seem "satellite communications appears as the best solution for the less wealthy countries and especially the most needy areas from both the economic and operational points of view." He said that the domestic satellite will be of fundamental importance in establishing communications systems to support national programs of education, health and agriculture; extending the coverage of radiobroadcasting, especially television, with a diversity of channels (more than one channel for each locality); and carrying public telecommunications to remote areas in complementation of ground networks.



The minister revealed that industrialization in the telecommunications area developed to such an extent that in recent years only 10 percent of the material used by the sector is still imported. Describing that process of nationalization, he explained that the transfer of large companies—the biggest suppliers—to the effective control of Brazilian businessmen was achieved without any trauma.

#### Contract with NEC

In Rio also, Haroldo Correa de Mattos and the president of the Brazilian Telecommunications Corporation (TELEBRAS), General Jose Antonio de Alencastro e Silva, participated in the signing of a contract between the Rio de Janeiro Telephone Company (TELERJ) and NEC of Brazil in the amount of 15 billion cruzeiros to supply the first two Time Stored Program Control (CPAT) telephone exchanges for the city of Rio de Janeiro.

One of the CPAT's will be installed in the building of the future Vila Isabel telephone station; the other, of the tandem type, will be installed in the Arcos station.

8711

CSO: 5500/2056

#### APPLICATIONS OF LANDSAT IMAGERY DISCUSSED

Rio de Janeiro JORNAL DO BRASIL in Portuguese 1 Jul 84 p 15

[Article by Israel Tabak: "Satellites Survey Earth Resources"]

[Text] Avoid conflicts over land in native areas; prevent frauds in rural credit; predict the size of harvests; control land clearing--those are only some of the modern uses of aerophotogrammetry and satellite pictures discussed at the 15th international congress on that speciality which closed in Riocentro last week.

But despite the advances and the ever more diversified uses, the specialists also asked themselves at the meeting about the dangers of the indiscriminate (and many times secret) use of this modern technology. These misgivings even came out in the opening speech by the minister of land affairs, General Danilo Venturini, who asked to what point photogrammetry and remote sensing helped or, on the contrary, hurt relations between countries.

#### The Other Research

The minister's concern is well-founded, explained one of the participants at the congress, Engineer Fernando Rodrigues de Carvalho, executive secretary of the cartography committee of the Planning Secretariat of the Presidency of the Republic: "Everyone knows that along with the official technology, discussed at meetings and seminars, there is the development and the parallel construction of spy satellites. And President Reagan himself has already confirmed that those satellites today can photograph an automobile license plate.

"It is obvious that the more developed powers can avail themselves of this valuable information much more. And nobody can know exactly what use they make of those devices. But for the less-developed countries such as Brazil, there is no other solution: we also have to seek to take maximum advantage of this technology so that our knowledge in that field will not become badly out of phase," said the engineer.

Through the Landsat satellite, which photographs Brazil every 16 days, the world market can learn ahead of time, for example, whether the

Brazilian soybean crop is going to be very good or bad. If the prediction is good, the tendency is a maneuver to lower the purchase price of the product. There is nothing to prevent the satellite from sometimes being able to work against the Brazilian economy, explained Fernando Rodrigues de Carvalho.

But there is another side of the coin: the satellites helped to alert Brazil early to the big orange-grove blight in Florida. Thus, producers and exporters were able to prepare ahead for the invasion of the American market.

At the congress, Marcio Nogueira Barbosa, director of the National Space Research Institute (INPE), showed other forms of support for the Brazilian economy by Landsat. One of the new programs checks the properties of all those who benefit from the farm credit of the Bank of Brazil to prevent frauds similar to that of the cassava scandal.

Landsat photographs the properties benefited to confirm if the money is in fact being used to increase the planted area. That is what has already begun to be done in the area of sugarcane growing in Sao Paulo.

#### Water in the Northeast

The discovery of water tables in sedimentary basins in the Northeast, still in the midst of drought-- at the end of last year--was a Landsat feat, the director of INPE explained. In Ceara, water tables were discovered and were used by the drought-stricken through the opening of wells.

With the discovery of these water tables it will be possible in the near future, according to Marcio Nogueira Batista, to create development poles in the areas with subterranean water where agriculture can be fostered. The water discovered may also provide the opportunity for an exploitation plan for supplying the state.

But, like the most modern process of remote sensing (by satellite), aerophotogrammetry also has its particular importance, especially in the area of cartography, declared Engineer Fernando Rodrigues de Carvalho: "The image from Landsat, like the photograph obtained by radar (Project Radam) is two-dimensional and not three-dimensional. However, in aerophotogrammetry we obtain a three-dimensional photograph.

"This means that in the two-dimensional photograph we know, for example, the existence of relief but we cannot specify its height, which is only possible in the three-dimensional photograph. Therefore, the maps obtained through photogrammetry are indispensable in many cases, such as, designing major projects."

The Cartography Dynamization Program of the Planning Secretariat of the Presidency is underway for the purpose of completely replacing the old maps of the thirties on a scale of 1 to 1 million because its detailing is

completely out of phase with the country's information needs. Funds amounting to around 5 billion cruzeiros a year are being allocated to the program which should map the whole country by 1990 on a more detailed scale.

Today, 78.6 percent of the country's area has already been mapped on an appropriate scale—1 to 250,000, 1 to 100,000 and even 1 to 50,000—permitting a better knowledge of our physical situation. What remains to be mapped is the regions in the northern part of the country where photogrammetry is quite difficult because of the constant bad weather.

"Many land conflicts involving Indians occurred because of imprecise photogrammetry with insufficient detailing," Fernando Rodrigues de Carvalho revealed. "Using those imprecise maps the occupation of lands was authorized in areas where it was presumed there were no Indians. But in the course of settlement, the contrary was discovered and conflict was inevitable. Today the more modern surveys are contributing to regularizing those areas."

The more detailed scales are also permitting better control over land-clearing by the Brazilian Institute of Forestry Development (IBDF) and reducing the costs of designing major projects such as hydroelectric projects, for example.

With the prior existence of modern cartographic surveys of the region selected, declared the expert, those designs turn out on the average 10 percent lower in cost.

8711

CSO: 5500/2056

FIVE MICROWAVE STATIONS TO BE BUILT IN ILAM PROVINCE

Tehran JOMHURI-YE ESLAMI in Persian 23 Jun 84 p 9

[Text] The design for the construction of five microwave stations in five regions of the Ilam Province have been prepared. These centers will be ready for operation by 1365 (21 Mar 1986-20 Mar 1987).

In a conversation with the correspondent of the IRNA, the director general of the telecommunication department of Ilam Province in addition to mentioning the above statement regarding the activities of this department went on to say: "Communication branch offices in the rural regions of Jan Jan, Sarab-e Eyvan-Zarneh, Chalsara, Haft-cheshmeh, Cheshmeh-ye Kabud, Banqelan, Ja'farabad and Pagol-egarab were opened last year and are ready for operation. Likewise 350 kilometers of cable lines have been laid to establish intercity communications, which by itself represents a 150 percent increase over the cable work of the Ilam Province telecommunication history. Furthermore, 62 kilometers of cable work has been completed for intercity communications and 80 percent of the repair to damaged cables has been finished."

He added: "During this period, in addition to using Ilam's 5,000 electronic telephone numbers, 350 new telephone numbers have been assigned to applicants. Intercity cable work in Chavar, Badreh and from Malekshahi Districts to Arko has also been completed. Similarly, 40-number semiautomatic telephone systems in Chavaree Sarableh, Badreh and Salehabad Districts and the 100-number telephone system of Dehloran have been installed." He continued, "In the current year intercity and rural telecommunication links in Armu and FX telecommunication in Dehloran have been established, likewise the communication branch office of Eyn-e Khosh has become operational."

At the end he mentioned that the cable work in Eslamieh Township, the installation of a 12-channel carrier network in Lomar, operation of telephone communication systems of rural areas of Mazhin-Sartang, Bahram-Khani, and Mehr-e Malekshahi, establishment of 40-number telephone systems of Badreh, Sarableh and Salehabad and other measures under consideration by the Ilam central telecommunications office during the current year.

12719

CSO: 5500/4734

# AUTOMATIC SWITCHING BUILT FOR CABLE LINES

Tehran KEYHAN in Persian 25 Jun 84 p 2

[Text] For the first time automatic telegraphic switching systems have been entirely designed and built by the technical branch of IRNA and is currently being used by the news exchange network of this organization.

The director of engineering affairs of IRNA while mentioning the aforesaid statement also pointed out measures in the technical field aimed at self-sufficiency and said: "After eight months of work the design of the automatic switching circuit was completed in 1983. We have tried to achieve the best possible output in terms of quality vs. the smallest volume in the design of this system."

He added: "So far three units of this system have been built according to international standards, while there are pending projects for 50 more units in the current year."

He further stated: "This system permits the mutual use of two telex and telegraphic apparatuses from two points on a line and a satellite channel while ensuring message security--and at the same time is able to separate communicated messages. The expense of this communication link will be divided proportionately between two subscribers. Use of this system in the telecommunication lines has resulted in foreign exchange savings."

He went on to say: "Every automatic switching unit costs approximately 10,000 Tomans, 20 percent of which covers the imported parts. Except for some of the electronic parts, the design and production of the rest of each unit has been carried out by our brothers in the engineering branch of this organization. It should be mentioned that at the present time the system is being used in the telecommunication network between Tehran and Tokyo; and it is planned that the same system will be used for Tehran-Rome and Tehran-Hamburg telecommunication links.

12719

CSO: 5500/4734



KERMAN'S NEW TELEPHONES TO BE OPERATIONAL THIS YEAR

Tehran JOMHURI-YE ESLAMI in Persian 26 Jun 84 p 9

[Text] With the endeavor and assistance of the employees of the Kerman Province General Department of Telecommunications from the inception of the victory of the Islamic Revolution to the present time construction proceedings of automatic telephone switching centers in six townships with a total of 18,000 telephone numbers have been completed; this figure represents an increase of 130 percent before the revolution.

While stating the aforementioned, the director general of General Department of Telecommunications for the Province of Kerman in a conversation with the IRNA correspondent also added: "During this period, in addition to the erection of telephone poles and 350 kilometers of cable lines along 18 connecting axes of the province, the installation work of telephone equipment and laying of the protective tubing of the new automatic telephone center with eight thousand telephone numbers capable of expansion to ten thousand has been completed. Work on laying cable for this center will begin in the near future."

He added: "This center will become fully operational in a few months."

Furthermore he said: "During this period the design of telephone linkage between 44 rural areas has been finished and they all have become operational. Likewise, for the time being construction of several automatic telephone center buildings in the townships of Bardsir, Shah-ebabak and Districts of Ravar, Mahan as well as the Sarcheshmeh copper complex are under consideration. The director general of telecommunications department of Kerman Province added: "Eight telephone networks of 40 and 60 numbers each in the regions of Ra'in, Ba'in, Kahnuij, Rabar, Kuhian, Chatrud, Abirabad and Anar have become operational. The installation of one 40 subscriber lines system in the war-afflicted region of Bostan and the setting up of Salavati communication offices in different sections of the warfront are other examples of the work completed during the said period."

Regarding the expansion of the intercity channels, he said: "During this period, in addition to the installation of 240 telephonic channels for the expansion of the Kerman microwave, 78 telephonic channels, 6 manual channels as well as 5 telegraphic channels have been set up and 56 public telephones for city and intercity service together with some operator-assisted telephone

booths have been installed in Kerman and the towns of Sirjan, Zarand and Sarcheshmeh copper (complex) all of which are now operational."

Concerning the installation of telecommunication offices he stated: "With the help and assistance of the employees of this general department, 44 branch offices of telecommunication throughout the province have been established. This figure by itself is three times that before the Islamic Revolution." He also said: "At the present time there are 60 telecommunication offices throughout the rural areas of the province ready for service."

Regarding the execution of future programs of this office, he said: "According to the proposed schedule of expansion, the establishment of city telephone centers and the setting up of communication links in other rural areas have been considered in the 5-year plan which calls for 33 urban telephone centers and 49 rural ones throughout the province."

Concerning the establishment of the new Kerman automatic telephone center he said: "In order to meet the general public and the merchants' needs, it is planned that another telephone center with a capacity of 30,000 numbers be set up in Kerman itself. The land for this project has already been assigned and construction plans are duly considered in the program of work."

About the new building of the Kerman telecommunication office, the director general said: "Construction proceedings of this project will cover nearly 4,000 square meters and is presently continuing with a credit fund of over 170 million rials and will be ready for use by next year."

Concerning the installation of intercity carrier systems he pointed out: "Last year the installation of 17 units of telephone systems each with 114 channels in 26 towns of Kerman Province were completed. Furthermore, for the convenience of the telecommunication employees of the towns of Jiroft, Zarand and Kerman, the building proceedings of 39 dwelling units are under way, of which 19 units have been assigned to the employees of this office by the Housing Foundation."

The director general of telecommunications at the end of this conversation regarding the assistance given by the employees of this office to the war fronts, said: "In 1983 alone 1.4 million rials were allotted by the staffs to the war fronts. Furthermore, five moslem employees of this office attained the lofty state of martyrdom while fighting against Saddam's mercenaries."

12719

CSO: 5500/4734



## EXPANSION PLANS FOR TELEPHONE SYSTEM DISCUSSED

Karachi DAWN in English 29 Jul 84 p VI

[Text]

**IN A MAJOR** expansion programme, the Pakistan Telegraph and Telephone Department will further expand its network during 1984-85 and sanction over 60,000 new telephone connections. Of this, about 31,000 new connections will be provided in the Karachi city alone.

According to the Director-General, Pakistan T & T Department, Brig Mansurul Haq Malik, in an interview last month, the Government had allocated a sum of Rs 1,600 million for the Department in the 1984-85 budget, with Karachi's share being Rs 330 million.

During the last fiscal year (1983-84), a total of 55,000 telephones were installed in the country. About 26,000 new connections were provided in the city of Karachi.

As against this background, the plan for the 1984-85 year envisages an ambitious expansion work.

It includes expanded local telephone system, microwave, satellite systems, WHF/UHF systems and laying of open wire lines and digital electronic exchanges.

The ratio of telephone and population comes at around 5:1000 — or 0.5 per cent — at present. The main aim of the Telegraph and Telephone Department during the Sixth Five-Year Plan period is to improve this ratio to 9:1000 — "Meaning thereby at least 9 telephones per 1000 people," said Mr Irshad Hasan, General Manager,

Karachi Telecommunication Region (KTR) in a recent interview.

In his words, the Government of Pakistan has formulated plans (during the Sixth Five-Year Plan period) to:

(i) Have a quantum jump in the number of telephones in the country;

(ii) Extend the 50 per cent expansion of network to rural areas, and the rest 50 per cent to actual pending demand;

(iii) Prompt development of long-distance routes;

(iv) Local manufacture of sophisticated telecommunication equipments;

(v) To expand overseas communication network;

(vi) More and more automatic telephone billing system;

(vii) Doubling the numbers of Telex and STD/NWD lines.

(viii) To raise the number of satellites — from the existing one to two;

(ix) To lay a sub-marine cable network; and

(x) To set up a cable manufacturing factory.

"Besides," he says, "A total of 520,000 new telephone lines would be provided to the subscribers in the country. During the Plan period, welfare of employees would also be a focal point in the Pakistan T & T Department's policy besides providing them with better and more useful training facilities."

At present, he added, there are about 82 employees per 1,000 telephones. This will come to around 70 per 1,000 phones at the end of the Sixth Plan.

The number of Public Call Offices (PCOs), at present 1,125 in Karachi, will come to around 3,125 by the end of the Plan. During the same period, the number of STD/NWD channels (now 6,000) will be increased to 15,000 and the number of telex lines (now, 3,500) will come to around 10,500.

Moreover, the T & T Department is also trying to set up a plant to manufacture digital exchange equipment within the country. "This will enable the Department to save millions of additional foreign exchange," the General Manager said.

The capacity of the country's first ever 10,000-line digital electronic exchange in Karachi, commissioned in May last, would be doubled by October next, he added.

The target of 520,000 lines for the Sixth Plan period actually includes over 300,000 lines on digital exchanges, he disclosed.

The Karachi Telecommunication Region has made 100 per cent progress in achieving targets both for opening of new telephone connections and installation of exchanges as provided in Annual Development Plan for 1983-84. Thus, the T & T has achieved the targets of the first year of the Sixth Five-Year Plan," Mr Irshad Hasan says proudly.

This is what the T & T chief has to say. But one thing should be clear. While the induction of modern technology in the country should be welcomed, every telephone subscriber has no doubt been thinking as to whether it will make any difference to the standard of service.

Whatever may be the claim of the T & T Department in regard to the general level of efficiency and honest application of its personnel, the fact remains that telephone users have to go through a number of ordeals, ranging from the merely irritating to that which is harmful and even, in many cases, shameful.

According to the General Manager, KTR poor service, such as cross talk, wrong number, etc. was due to overloading of the system. This may well be true, but the fact is that all the faults of the telephone system cannot so conveniently be attributed to overloading. Many of the faults arise from shoddy maintenance, including that of the exchanges themselves and part of the shoddy maintenance can be traced to negligence of duty.

To have a telephone in big cities like Karachi is like an instrument of distress, so troublesome is it at times. Within Karachi, for instance, it is almost next to impossible to get through to other numbers in the first attempt. So much so that people some times balk at the idea of having to make a phone call. It is a common experience these days, thanks to the inefficient system, to listen to ring going to two telephone numbers, after one dials a particular number. Unfortunately, none is the right one and one can listen two persons abusing each other as they pick up their receivers. One, who dials, has nothing to do with the conversation. It is a mystery as to whose instrument registers the call. Or, is it that all the three ones do?

There must be reasons why the telephone system has been virtually thrown out of gear in this country. One can point towards lack of sufficient planning and a preference for piecemeal approach. Ad hoc arrangements and improvisations made in search of easy solutions have also created complications. Extensions have been undertaken beyond permissible technical limits, leading to disruptions and frequent faults and breakdowns.

A news item appeared some months back informed us of a new device developed in Britain which said: "Subscribers haunted by inflated telephone bills will find the device a blessing in disguise. It keeps a complete record of the calls made with their timings, duration and dates."

Called "Printacall", the device may be an ideal solution to the problems of Public Call Offices, other offices and big organisations. Its system is computerised and it can be programmed to monitor the costs of local as well as long-distance calls. After each call printed data giving details is put out by the machine and the caller can immediately know the cost.

An irate telephone subscriber has in a letter to a national daily suggested the installation of such or the like meters at the consumer's end so that it can be verified any time and he cannot be 'forced' to believe on the T & T readings. This will, it said, automatically remove the complaint of the excessive billing of fictitious calls, and root out the corruption so deeply rooted in the Department.

Now that an overburdened system is almost falling apart, corrective measures to restore its viability, and more important to restore the subscribers' confidence, are necessary before moving towards new plans.

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## LAHORE DIGITAL EXCHANGE TO START

Karachi DAWN in English 26 Jul 84 Business Supplement p 1

[Text] LAHORE, July 25: A modern digital telephone exchange of 10,000 lines will start functioning here next month.

Work on the project started last February under the supervision of Swedish experts and later by some 14 Pakistani engineers, who were trained in Sweden for the upkeep and maintenance of the exchange. The nearly completed exchange is housed in the Central Telegraph Office.

The exchange, which has '22' as its code number, has cost Rs 75 million. The computer which would control all the functions of the exchange is connected with two similar exchanges set up at Shah Alami and Samanabad with 4,000 and 6,000 lines, respectively. The code of the new digital exchange at Samanabad will be '27'. For Shah Alami it will be '25'. Thus, the computer at the Central Telegraph Office will control some 20,000 lines. The installation of the two mini-digital exchanges would be completed by the end of the year at a total cost of Rs 65 million.

It is understood that all pending applications, numbering around 18,000 in the areas to be fed by the digital exchanges, will be given connections. The 10,000-line central exchange will mostly cater to the needs of the commercial areas of the Mall, Beadon Road, Railway Road, through Thornton Road, and adjacent areas.

Another advantage of this digital exchange will be reduction in the number of billing complaints. Bills issued from this exchange will give a detailed account of calls made by a subscriber. Among other facilities the subscriber may have a 'hot line', with the number most frequently or urgently needed by him. To avoid other people from making outstation calls, a subscriber would feed the computer with some 'pass words,' as code. This would make the misuse of a telephone number impossible. Another facility offered is that a subscriber will be able to feed upto 20 important numbers to the computer. The subscriber would then be able to call these numbers by dialing single-digit codes.

The list of facilities does not end here. A subscriber can feed the computer his travel programme and a call from someone made to his home number would go on chasing him until he is reached. A subscriber would be able to ask the computer to awaken him at a given time. His phone will ring at the time wanted.

This most-sophisticated telephone exchange would perform perfectly but if its functioning is disturbed it would be due to the external telephone network. It may be recalled here that a similar telephone exchange at Karachi which started functioning in may this year is working well.

## FIGURES ON RADIO, TELEVISION INDUSTRY PROVIDED

Karachi DAWN in English 29 Jul 84 p V

[Article by Dr Noor Ahmed Memon]

[Text] **RADIO** manufacturing was started in 1950 when a few entrepreneurs started the assembly of radio sets from entirely imported components. There were 7 units for the assembly of 30,000 sets per annum. By 1960 the production increased to 75,000 sets and 18 new units were added.

Growth during 1960-72 was about 10-15 per cent. The total installed capacity reached about 5 lac radio sets per annum and maximum local integration was achieved 60-70% of the components used in radio receivers were either manufactured by the assemblers or manufactured by third party.

At present, the production of radio transistors is concentrated mostly in small-scale units due to large imports of cheap parts from Japan and Hong Kong. These sets are being sold for Rs. 150-350 per set according to the number of bands. These manufacturers who are not listed, neither pay excise duty and sales tax nor income-tax to the Government. This is why recognised manufacturers, produce small quantity of radio sets.

The annual issue of licences for radio and transistors increased from 1 million, in 1971-72, to 1.4 million, in 1982-83. However, total number of licences issued during 1972-83 were 16.3 million. Year-wise details of licences issued is given in table-1

Table-1

## Radio Licences Issued

Year:	Number:
1971-72	1,039,365
1972-73	1,560,668
1973-74	1,435,226
1974-75	1,387,884
1975-76	1,520,850
1976-77	1,227,453
1977-78	1,604,126
1978-79	1,489,589
1979-80	1,799,914
1980-81	1,528,827
1981-82	1,336,310
1982-83	1,400,000

Federal Bureau of  
Statistics,  
Govt. of Pakistan.

Imports of transistor radio and radio parts since 1975-76 is given in table-2.

It may be observed from the above table that the import of transistor radio has increased from 182 numbers valuing Rs. 62 thousand, in 1975-76, to 361,632 numbers valuing Rs. 953 thousand, in 1982-83, showing an average increase of 180

per cent per annum in terms of value. On the other hand import of radio parts declined from 158 tonnes valuing Rs. 12.99 million, in 1977-78, to 10 tonnes valuing Rs. 2.32 million, in 1982-83.

At present the following duties are imposed on the import of radio and parts.

	Custom Duty	Sales Tax	Surcharges
— Portable Radio	120% ad. val.	20%	5% ad. val.
— Parts.	The rate applicable to the apparatus of which they form parts.	20%	5% ad. val.

Source: Pakistan Customs Tariff, Central Board of Revenue.

In Pakistan TV transmission was commissioned in 1964 and Government had allowed the import of TV sets at that time. Pakistan TV now has a full-fledged production and transmission centre in each of the four provinces and fifth at the Federal Capital. There are five stations with studios, and the 12 re-broadcast stations for TV network, connected by the micro-wave-link. Many of the programmes are now telecast over the network, and some by the individual TV centres for their own region. Colour TV was introduced in December, 1976.

The coverage on population basis, according to Television Corporation, increased from 74% in 1977-78, to 82% in 1983. However, the number of telecasting hours increase by 41.94 per cent during the last seven years. Station-wise telecasting hours are given in table-3.

Television sets are being imported under personal baggage scheme also. At present the following import duties are imposed under personal baggage and commercial imports:

The assembly of TV sets commenced in the year 1965 and production of 12,500 sets was recorded in year 1965-66 which rose to 40,000 sets in 1968.

At present 8 licensed units are assembly and manufacturing more than one lac TV sets

Table-2

Import of Transister Radio and Parts

Year:	Transister Radio		Radio Parts	
	Qty.	Value	Qty.	Value
	(Nos.)	(Thousand Rs.)	(Tonnes)	(Million Rs.)
1975-76	182	62	52	8.52
1976-77	77	7	93	9.28
1977-78	12	26	158	12.99
1978-79	—	—	195	7.14
1979-80	300	52	22	2.16
1980-81	—	518	16	4.94
1981-82	134,711	1,630	8	1.31
1982-83	361,632	953	10	2.32

Source: Federal Bureau of Statistics, Govt. of Pakistan.

Table-3

Number of Telecasting hours by Station and Channel:

Year	(Telecasting hours)				
	Karachi	Lahore	Rawalpindi/ Islamabad	Peshawar	Quetta
	(4 & 9 channel)	(5 & 8 channel)	(4 & 8 channel)	(10 channel)	(6 channel)
1976	1,445	1,349	871	422	1,32
1977	2,158	2,158	2,158	2,158	2,158
1978	2,416	2,381	2,05	2,546	2,389
1979	2,642	2,631	2,638	2,711	2,637
1980	2,812	2,771	2,707	2,850	2,819
1981	2,812	2,771	2,707	2,850	2,819
1982	2,040	2,024	2,024	2,033	2,071
1983					

Source: Federal Bureau of Statistics, Government of Pakistan.

per annum. The production of colour/black and white television sets increased from 85,759 sets, in 1978-79, to 110,523 sets, in 1982-83, showing an increase of 29 per cent. Production of TV sets in the country since 1978-79 is given in table-4:

Year:	No. of reporting factories	Production (Sets)
1978-79	8	85,759
1979-80	8	74,427
1980-81	8	86,909
1981-82	8	107,855
1982-83	8	110,523

Source: Federal Bureau of Statistics, Government of Pakistan.

The major brands of TV's are Philips, Sharp, Rina, RGA, Toshiba, N.E.C., Hitachi, National, Vidotone, Russian, Sanyo and Crown.

**IMPORT:** The import of television sets complete decreased from 13,054 sets valuing Rs. 10.59 million, in 1975-76, to 4,48 sets valuing Rs. 6.42 million, in 1980-81. The decline in the imports after 1978 may be attributed to the fact that licences were restricted from October, 1978 and were given on the basis of old performance. On the other hand import of television parts has seen marked increase in the year 1977-78 reaching a peak of 2,688 tonnes valuing Rs. 155.33 million. However, in later years imports started declining and in 1980-81 stood 684 tonnes valuing Rs. 101.68 million. The import of television sets complete and parts during the last eight years are shown in table-5:

#### IMPORT POLICY FOR TV ASSEMBLER:

In the Budget 1984-85, Government is pleased to authorise delivery without payment of so much of the customs duties chargeable thereon as are in excess of 25% ad valorem on such television components and materials as are specified in the table below, and spare parts (excluding the deleted parts) not exceeding 7% of C&F value of imported components, on import by a recognised manufacturer or assembler of televi-

Table-5

#### Import of TV Sets and Parts

Year:	TV sets complete		Parts of TV	
	Qty (Nos)	Value (million Rs.)	Qty (tonnes)	Value (million Rs.)
1975-76	13,054	10.54	1,931	72.11
1976-77	5,310	4.21	1,722	95.77
1977-78	1,147	1.57	2,688	155.33
1978-79	6,311	5.16	1,126	95.56
1979-80	5,528	5.34	1,254	110.94
1980-81	4,478	6.42	684	101.68
1981-82	3,726** /	7.48	143,030 x /	45.07
1982-83	637,527** /	5.24	230,030 x /	56.249

x / No. of television picture tubes

\*\* / Television receivers colour

Source: Federal Bureau of Statistics, Government of Pakistan.

Table-6

#### Import duty on colour and black and white television sets

	Under personal baggage:	Commercial importer:
— Custom Duty	85% ad. val.	85% ad. val.
— Sales Tax	10%	10%
— Surcharges	5% ad. val.	5% ad. val.

Note: Sales tax free on components and parts of television reception apparatus (vide SRO No. 661(1)/80 dated 26.6.1980).

Source: Pakistan Custom Tariff, Central Board of Revenue.

sion reception apparatus, subject to the conditions:

Table-

S. No.	Description
(1)	Metal clad board metal up to 0.15 mm thickness).
(2)	Semi conductors, diodes, transistors and similar semi-conductors devices.
(3)	Fixed and variable resistors.
(4)	Capacitors.
(5)	Tuner parts/components.
(6)	Integrated circuits.
(7)	Picture tube.
(8)	Component parts for items at serial No. 1 to 7 above.

Source: Import Policy 1984-85.

#### DEMAND

At present there are around 850,000 of colour/black and white television sets in Pakistan as shown in table-7:

Table-7

#### Number of Television sets in Pakistan

Year:	No. of Sets
1971-72	129,023
1972-73	144,924
1973-74	243,205
1974-75	303,663
1975-76	415,033
1976-77	468,896
1977-78	545,878
1978-79	581,896
1979-80	663,516
1980-81	582,815
1981-82	706,256
1982-83	850,000

Source: Federal Bureau of Statistics, Government of Pakistan.



Table number eight illustrates the position of number of television sets by station:

It may be observed from the above table that against this, transmission facilities have been developed to cover 82% of the country's population although the number of sets are very low. It is estimated that total demand of television sets may be projected to approximately 2.6 million by the end of Sixth Plan. This shows that there is great potential for the expansion of television sets assembly/manufacturing industry in the country.

Table-8  
Number of television sets

Year	(000 Number of sets)				
	Karachi	Lahore	Rawalpindi/ Islamabad	Peshawar	Quetta
	(4 A 8 channel)	(5 A 8 channel)	(4 A 8 channel)	(10 channel)	(6 channel)
1976	210	109	80	14	1
1977	230	123	96	16	2
1978	290	163	127	23	4
1979	311	186	151	26	6
1980	293	216	89	35	3
1981	457	276	222	37	8
1982	443	377	172	46	11
1983	471	401	183	40	11

Source: Federal Bureau of Statistics, Government of Pakistan.

CSO: 5500/4744



MARITIME TELECOMMUNICATIONS COUNCIL SESSION ENDS

LD200219 Moscow TASS in English 0022 GMT 20 Jul 84

[Text] Moscow July 19 TASS -- Problems pertaining to the creation of a second generation of the coast-outer space-ocean system have been discussed at the 18th session of the Council of the International Organisation for Maritime Telecommunications by Satellites (INMARSAT).

The seven day session has closed in Moscow. A second outer space communication station is to be put into service, in particular, in the Soviet town of Nakhodka, to service the Pacific and Indian Oceans. A similar station is already in operation in Odessa.

The session, which examined some technological and financial issues, was attended by representatives of major sea and outer space powers.

The INMARSAT system is in operation in accordance with a governmental convention concluded by 36 countries and makes it possible to maintain efficiently telephone communication by means of satellites with ships in the Atlantic, Pacific or Indian Ocean.

One of the paramount objectives of the system is participation in ensuring the safety of navigation. In expert opinion, there is an opportunity to complement successfully the international programme for a search for ships and aircraft in distress known as "Cospas-Sarsat". The latter spots with great precision the position of a ship or plane in distress, but INMARSAT receives and processes distress signals much speedier.

On the Soviet Union's initiative it has been specially stipulated that the INMARSAT system can be used only for peaceful purposes.

CSO: 5500/1041

## PIRATE RADIOS INTERFERING WITH RADIO FINLAND BROADCASTS

Helsinki UUSI SUOMI in Finnish 12 Jul 84 p 7

[Text] Foreign pirate radio stations are interfering with Finnish Broadcasting Corporation radio reception in the Baltic and Southern Sweden. There are several pirate radio stations located in international waters in Europe; two of them operate on the same frequencies as the Helsinki and Turku medium-wavelength stations. An illegal radio station pops up now and then in Finland too, but it is immediately shut down, a team from the Finnish Broadcasting Corporation's Distribution Technology Department told us.

Known under the name of "Carolina," the pirate radio station is located on a ship somewhere in the southwestern part of the North Sea. For several years now "Carolina" has interfered with a program transmitted via the Finnish Broadcasting Corporation's Turku station on a frequency of 963 kHz. The Finnish Broadcasting Corporation program can in principle be heard in Southern Sweden too, but "Carolina" spoils the pleasure of listening to it.

A station called "Laser," which started operating at the end of this spring, also broadcasts from the North Sea. Now "Laser" interferes with Radio Helsinki I broadcasts on a frequency of 558 kHz.

## Five Stations in Europe

It is estimated that there are five pirate stations in Europe. They are located on ships in international waters and broadcast disco pop music and commercials round the clock.

The stations operate on medium wavelengths. Theoretically, they are best heard during darkness hours, for example, during the darkest moments of winter. Nights the stations can be heard even farther off than Helsinki and Turku.

In the spring a couple of new pirate stations, among them "Radio Ship Communicator," appeared in the North Sea, stations that have not had any more noteworthy success. It is estimated that there are perhaps some 10 pirate radio stations on the entire globe. One of them is located in Tel Aviv, "Voice Spires," which does not, however, interfere with Finnish Broadcasting Corporation broadcasts.

According to information from the Finnish Broadcasting Corporation, pirate radio stations like "Carolina" and "Laser" are multinational stations. They are chiefly maintained by English and Dutch businessmen in the industry. The stations are funded through commercials on which no taxes are paid.

Pirate radio stations began operating in the early 1960's. Among others, "Radio Veronica," located in the English Channel and "Radio Nordi," stationed offshore of Stockholm, broadcast their programs at that time.

Due to the small number of radio frequencies available, in different parts of the world several radio stations operate on the same frequencies — either officially or illegally. So it is no wonder that we now and then hear the official Algerian radio station, "Tipaza," on Lahti's 254-kHz wavelength.

The European Broadcasting Union (EBU) has banned pirate radio stations. However, no international law prohibits the pirate radio stations from operating. These stations choose for their use a frequency on which broadcasts to be received in a given target area are weak. Since the stations operate in international waters, it is difficult to hold them responsible for interfering with official radio stations.

Finnish laws ban assistance to pirate stations. However, not all countries have similar laws.

Chief engineer Kalevi Sappinen of the Post and Telecommunications Administration's Radio Department told us that several pirate radio stations a year are uncovered in our country. Some years ago at its height, five illegal radio stations were operating at one time. Reception of these radio stations fluctuated from 1 km to several hundred kilometers. The stations are located fairly evenly around Finland.

"In general, broadcasts last several tens of minutes. The programs consist largely of music, which is broadcast evenings and weekends," chief engineer Sappinen said.

11,466  
CSO: 5500/2740

COUNTRY FIRST IN EUROPE TO USE BUSINESS VIDEOPHONES

Helsinki UUSI SUOMI in Finnish 13 Jun 84 p 10

[Article: "Businesses Compete for Manufacturing Rights; Videophones Will Be in Business Use Even Before the Year Is Out"]

[Text] The ordinary citizen will not get a videophone for his own use before the turn of the century, although videophones will be in use in some Finnish businesses even before the year is out.

The obstacles to widespread use of the novel device extending into every home are the high cost and the small number of touch-tone telephone exchanges.

Finland is the first country in Europe to have developed a videophone — more officially referred to as a device for the transmission of video conference pictures. The State Technical Research Center (VTT) equipment has competitors in Europe, but the unquestionable advantage of the VTT device is the rapid return time of the image. Other devices now on the market are capable of transmitting an image once every 5 seconds at best.

Businesses Interested

The videophone has aroused interest in different industrial firms. Negotiations are right now in progress for the sale of manufacturing rights for the device. A patent application for coding systems and decisions regarding the device is also pending.

Among others, Salora, which has itself conducted research projects touching on videophones, has engaged in negotiations with VTT.

They place great faith in the VTT device at Salora.

"Although it still needs a lot of development, the device is promising. The VTT device is not yet ready; it's only an experimental model," Salora development operations manager Martti Juva said.

"There is unquestionably a great need for videophones. They are especially needed for business conferences. [With them] travel to conferences will be reduced," Juva remarked.

A poll taken by the Finnish Gallup Company on the potential for marketing video conference systems in Finland supports Juva's opinion. Industrial and commercial firms definitely need to reduce the volume of conference travel. Businesses are also prepared to invest surprisingly large sums in communications technology.

#### Are Videophones Needed in Homes?

Licensed technician Pentti Haikonen of the VTT calculates that Finland's first videophones will be in operation in business firms even before the year is out.

These devices will not appear in homes until the turn of the century. The shortage of touch-tone telephone exchanges and the high cost of the equipment, 100,000 markkas, are obstacles to this, although Haikonen believes that the price will drop even lower when components become cheaper.

Nor does Juva believe that the device will find its way into homes either.

"I'd be quite surprised if videophones were sold to ordinary consumers. The device is still too expensive for that and then too I'm not quite convinced of the need for the device in homes either."

11,466

CSO: 5500/2740

# FRANCE'S DGT SEEKS EUROPEAN COOPERATION IN TELECOM VENTURES

Paris ELECTRONIQUE ACTUALITES in French 22 Jun 84 pp 1, 12

[Article by D. Levy]

[Text] The industrial consolidations effected in data processing (around Bull), telecommunications (around CGE [General Electric Company]), and components (around Thomson) are justified in terms of critical size, market shares to be secured, and financing capabilities. They nevertheless have the disadvantage of appearing, even if three nationalized groups are involved, as monopolies on the public markets.

This is what has prompted governments--especially during the past 6 months when France has chaired the European Community--to wage a vigorous campaign in favor of industrial cooperation premised on the opening up of public markets. The logical consequence of this policy has been stated on several occasions by Louis Mexandeau, French minister for post and telecommunications, to the effect that this trend represents the emergence of a third, European, pole in the electronics field, supplementing the American and Japanese poles. In this context the DGT [French General Directorate of Telecommunications] is increasing its initiatives to create a genuine European telecommunications market.

The DGT's action is essentially pointed in three directions: the standardization of technical norms of telecommunications equipment, direct transnational purchases, and joint projects (the French-German 900-megahertz radiotelephone). A major convergence is noted in this connection between these orientations and the proposals recently originating from the Commission in Brussels, notably on the problems of standards and direct purchases (at least 10 percent of public orders would be open for foreign bids). It would seem that a convergence may also be taking shape regarding the need to promote a genuinely European industry.

This multifaceted action of the DGT covers all the European countries. But, as evidenced by the difficulties of the Ten [EEC members] in following the rule of unanimity, it seems to be easier to seek a bilateral agreement capable of



gradually involving the other partners. In this respect, everything seems to indicate that, as at the time when the Common Market was established, there can be no Europe of telecommunications without French-German cooperation. Comparable public markets and strong industries in both these countries argue in favor of such an understanding.

#### Approach of the Federal Republic of Germany

To be sure, as regards the existing telephone exchanges, the matter seems to be settled: The FRG has opted in favor of the "EWS-D" products of Siemens and of ITT's "System 12" (supplied by SEL [Lorenz Standard Electric Company]), and it would be surprising if the FRG Ministry of Post and Telecommunications were to allow itself to be seduced by a third (French) system.

But for other products, the possibilities of understanding do not pose major problems. Thus, an exemplary agreement was concluded to build a 900 megahertz cellular radiotelephone system (the invitation to bid is now being issued) based on common standards, implying direct orders of the two government agencies in the two countries, and industrial cooperation (one may simply wonder about the opportunity for a very large General Electric-Thomson-Siemens-Philips (through its German Tekade affiliate) consortium. Elsewhere, just a single digital system would make it possible to develop European cooperation around a commercial service anticipated by 1992-95.

Terminals, and more particularly telephone receivers, offer another possible field of cooperation. The recent discussion by the Ministry of Post and Telecommunications regarding the supply of an electronic unit slated to succeed the "S-63" dial telephone unit did not allow German manufacturers to make a bid for lack of uniform specifications. But a new invitation to bid will be issued next year following the streamlining of standards, which should allow manufacturers in the two countries to respond to the offers of the two government agencies.

Other fields of cooperation envisioned are those of transmission equipment and videotex. The former has the advantage of being produced according to international specifications (in accordance with the instructions of the CCITT [Consultative International Telegraphic and Telephonic Committee]) and therefore lends itself to interchangeability. An agreement for purchasing reciprocity could thus be found. But does the small size of French orders for transmission equipment represent a sufficient stake? As for videotex, two obstacles are to be overcome: the different standards in the two countries and the procedure of the FRG Ministry of Post and Telecommunications which is specifically involved in supplying modems of the BTX.

#### Standards

So the significance of standards is crucial in the field of cooperation in telecommunications. That is why the decision just made by the CEPT [European Conference of Postal and Telecommunications Agencies] to establish a permanent secretariat in Paris to make the standards of the European countries compatible and to accelerate equipment standardization procedures represents a major step



forward in arranging European cooperation in the field of telecommunications. That this decision should have been made under the presidency of Mr Dondoux, director general of telecommunications, says much about the French resolve to open Europe's telecommunications borders.

Besides Germany, Britain represents another major potential telecommunications partner for France. Hence the DGT's proposal for cross orders for telephone exchanges: "E-10" in Britain, "System X" in France. It cannot be claimed that such a proposal arouses the enthusiasm of British operators but, with or without reservations, an invitation to bid issued by British Telecom will be open to French industrialists.

An agreement with Britain comes up, among other things, against the issue of deregulation which was backed by the British Government. All observers have noted, however, that in the discussions held in Britain, the concept of privatization (of British Telecom) is increasingly having an edge over the possibility of deregulation. And with good reason: A telecommunications operator will be all the more in demand on the London Stock Exchange to the extent that it will not be "deregulated."

It is difficult for France's DGT to propose to Italy an exchange of products in the field of electronic switching. In contrast, the DGT can support the action of a French industrialist. At any rate, its attitude could not be neutral in that country where one witnesses sustained pressure being put on IBM--that is its game--to secure a partnership agreement with the Italian operating company (in the improved networks) in exchange for industrial investment in the south (this would involve the Rolm private telecommunications exchange plant of 2,000 workers).

The entire clash between IBM and the DGT--and most of its counterparts in Europe with which a convergence of views is taking shape--is indeed premised on a division of roles in these new improved networks.

Everyone still recalls the lively reactions of IBM some 10 years ago vis-a-vis Transpac (which may be considered an improved system of the first generation). The DGT refuses to allow itself to be locked into the role of simple supplier of lines whereas IBM would provide an improved version of the system by setting up its computers on the lines (for example, to provide messaging, code conversion, signals, and so on). All the market studies show that while the sales of telephone exchange equipment have tended to decline, those of the improved systems will grow sharply.

It is in this context that each one now recognizes that the major beneficiary of the deregulation of telecommunications in the United States is IBM. In Europe France's DGT and some of its partners feel that it is appropriate not to offer any additional advantages to IBM which already dominates the data processing market. Will this reasoning, which is gaining ground, serve the cause of cooperation? Stated differently, will the European consolidation in telecommunications be brought about in opposition to IBM?

2662  
CSO: 5500/2734

FIRST OVERHAUL OF COMMUNICATION LAWS SINCE 1941 ENACTED

Stockholm NORDISK KONTAKT in Norwegian 26 Jun 84 p 831

[Article: "New Telecommunications Law: State Monopoly To Sell Customer Equipment Revoked"]

[Text] At the end of the session Parliament enacted a new law on inculcated in the new law have also been enacted with a view toward new technology. Moreover, the law dissolves the state's exclusive right to import and sell equipment related to telecommunications.

The law clearly distinguishes between telecommunications installations and equipment. The first category includes all kinds of instruments and apparati, parts adhering thereto, lines, etc, which especially serve as objects to connect and operate telecommunications in any capacity dealing with sending or receiving. In contrast, equipment includes all kinds of components and lines which are connected to the public communications system.

Previously, the state had the exclusive right to maintain and operate every form of telecommunication in Iceland or in the Icelandic seas and air space, and to issue lists of names concerning telecommunications stations and patrons of encompass equipment. Those who import or produce equipment which will be connected to the state telecommunications system, shall receive permission beforehand from the Post and Telegraph Ministry stating that every individual type of equipment fulfills the technical requirements which are in effect at any time.

In a case where the Post and Telegraph Ministry refuses to approve equipment, the authorities can refer the matter to a board which the Minister of Transport and Communication appoints, and this board will have decisive authority in the case.

The law has also clear regulations regarding the importer or producer of equipment providing for spare parts and maintenance service at any given time.

These are the most important changes the new law includes. The law proposal was created by a committee appointed in November 1981 by the Transport and Communication Minister of that time, Steingrímur Hermannsson (Progressive Party). The committee completed its work early this year and forwarded its recommendation to the current Transport and Communications Minister, Matthías Bjarnason (Independence Party).

The committee was requested to acquaint itself with laws on telecommunications in neighboring countries. In the remarks which followed the law proposal, it is stated that the committee received its recommendation from a committee which worked with revisions of the telecommunications law in Norway, and that the Icelandic Telecommunications Committee's recommendation on the important points is in agreement with this one.

#### Changes in the Broadcasting Law?

The report on the law proposal further states that the committee has placed the main burden of maintaining the secrecy and protection of telecommunications upon individual persons and institutions as well as with the Post and Telegraph Ministry and the state. In addition, the regulations regarding security in wartime have been tightened in the new telecommunications law.

Finally, the report for the law proposal states that rapid technical advances require that telecommunications law and regulations in this field demand constant revision for adaptation to changed conditions. For example, current changes in the broadcasting law could possibly lead to changes in the telecommunications law.

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CSO: 5500/2741

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